



A new species of *Huarpea* Pate, 1947 from Colombia and redescription of *H. wagneriella* (du Buysson, 1904) (Hymenoptera: Sapygidae)

FERNANDO FERNÁNDEZ¹ & CARLOS E. SARMIENTO*Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Apartado 7495, Bogotá D.C., Colombia.**E-mails: ffernandezca@unal.edu.co & cesarmientom@unal.edu.co*¹*Corresponding author: E-mail: ffernandezca@unal.edu.co*

Abstract. *Huarpea colombiana* sp. nov. from Colombia (Meta) is described and illustrated. This is the first record of the family Sapygidae for Colombia and northern South America. *Huarpea wagneriella* (du Buysson, 1904) is redescribed. An updated key to Neotropical genera and species of Sapygidae is given.

Key words: taxonomy, Neotropical Region, wasps

Introduction

The family Sapygidae is a small one and comparatively rare in the nature. There are 69 described extant species distributed among 12 extant genera in two subfamilies. The family is distributed in all zoogeographical regions except the Australia, but most abundant in the Holarctic Region. Four genera are known beyond the Holarctic Region: *Araucania* Pate, 1947 (1 Neotropical species), *Huarpea* Pate, 1947 (5 Neotropical species), *Sapyga* Latreille, 1797 (Holarctic Region and 1 species from Costa Rica) and *Parasapyga* Turner, 1910 (4 Oriental species) (Kurzenko 1996, Bennett & Engel 2005, Huber 2009, Kurzenko 2012, Achterberg 2014). The Neotropical region has been poorly studied and there are records of three genera and seven species and despite that Hanson (2006) indicates the presence of four unidentified species (Pate 1947, Hanson 2006).

Sapygidae is a family of either ectoparasitoids or cleptoparasites. The Nearctic species of *Fedtschenkia anthracina* (Ashmead) is ectoparasitoid of *Pterocheilus trichogaster* Bohart (Vespidae: Eumeninae) wasps while the species of Sapyginae are ectoparasitoids or cleptoparasites of the bees (Megachilidae, Apidae or Colletidae). Hurd and Moure (1961) provide notes on the parasitism of the sapygid *Polochrum fallax* (Gerstaecker) on the neotropical bee *Xylocopa brasiliatorum* (Linnaeus) but latter studies have concluded that the wasp species is *Huarpea fallax* (Hanson 2006, Torretta 2014). Torretta (2014) studied the life cycle of *H. fallax* parasitizing two Megachilidae species in the Argentinean Pampa. *Sapyga* spp. parasitize leaf cutting bees (Hanson 2006).

In his paper we describe a new species of Sapygidae from Colombia and redescribe the related species *Huarpea wagneriella* du Buysson.

Material and methods

The specimen of the new species was collected through a malaise trap set at the Reserva Nacional Natural La Macarena, Meta, Colombia. Specimen observations, measurements and pictures were done using a 80X Leica S8APO stereomicroscope with a calibrated scale, and a 3Mpixels Leica DCM 300 camera attached. All in focus images were produced using the software Combine Z5.3 (Hadley 2010) of a series of multiple images of the specimen. The following abbreviations are used: HW, head width; HL, head length; SL, scape length; ML, mesoscutum length; FWL, fore wing length; T and S refer to numbered metasomal terga and sterna respectively.

Collections: IAvH (Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Villa de Leyva, Colombia) and MHNP (Muséum National d'Histoire Naturelle, Paris, France).

***Huarpea colombiana* Fernández & Sarmiento, sp. nov.**

(Figs 1A–C)

Diagnosis. The median clypeal emargination, median clypeal sulcus, anchor shape clypeal yellow spot and metasoma color pattern separate this species from other congeners.

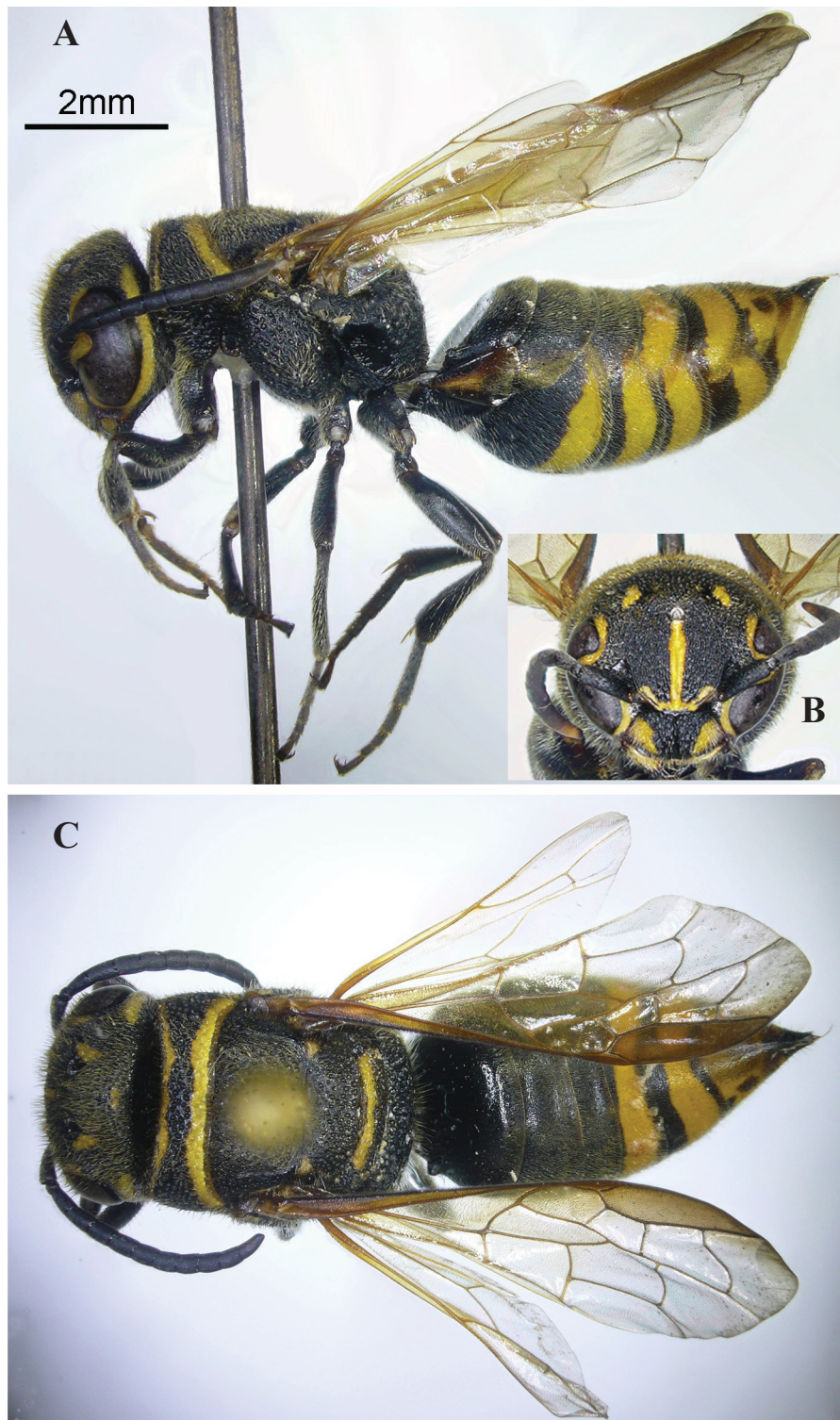


FIGURE 1. *Huarpea colombiana* sp. nov., A. lateral view, B. Head in frontal view, C. Dorsal view. Scale = 2 mm.

Description. HW = 3.26, HL = 2.85, SL = 0.92, ML = 2.34, FWL = 8.46 mm. Black except yellow apical half and outer lateral spot of mandible; anchor-like spot on frons, band around eye orbit except dorsal part; small spot laterad

lateral ocellus; posterior and slender anterior pronotal bands; two small axillar spots; anterior metanotal band; T4–6 and S2–6 with wide posterior band; T6 with small lateral brown spot; S6 with brown apex; wings infusate with darker costal, stigmal, and marginal cells.

Abundant short setae on frons, less dense at clypeus and pronotum; mesoscutum with short decumbent setae; propodeum medially with a few setae; metasoma with fine pubescence. Setae on head and pronotum ferruginous and grayish on other parts of body.

Head and mesosoma with deep, irregular, dense pits, with small smooth area anterior and laterad of ocelli. Frontal carinae short, about 2/3 as long as scape; sides of frontal sulcus forming depression which covering scape partially; clypeus with weak median longitudinal depression; mandible bidentate; second submarginal cell of fore wing anteriorly almost as long as distally; occipital carina incomplete; S1 with largely concaved area and small lateral tubercle; S6 cone-like.

Material examined. Holotype, ♀, COLOMBIA. Meta, Reserva Nacional Natural La Macarena, Cabaña Cerrillo, 3°21'N 73°56'W, 460 m, Malaise trap, 21.xii.2002 to 4.i.2003, A. Herrera & W. Villalba leg., M2983 [IAvH].

Distribution. Colombia (Meta).

Comments. *Huarpea colombiana* shares with some aspects of the Chilean species *Araucania chilensis* (Reed 1930) but differs by the coloration of antennae, legs, and S2.

This is the first record of the family for Colombia and northern South America. The irregular distribution of the group deserves further studies as its closest record comes from Parana, Brazil (Hurd & Moure 1961) with no data from intensively sampled regions in between. Similar anomalous distributions have been reported for Megalyridae which was collected in the Colombian amazons but previously known only from the extreme south of South America (Shaw 2003).

The rareness of this genus is more pronounced given the widespread distribution of its recorded hosts; the bee genus *Xylocopa* is found along the Western Hemisphere from sea level up to 2000 m, and the genus *Megachile* which is extensively found across the continent (Michener 2007). The specimen was collected in a malaise trap set at the Reserva La Macarena (Meta), an area with gallery forest and perturbed savannas where *Xylocopa* species, specially of the subgenus *Neoxylocopa* Michener are very common (Fernández & Nates 1985).

***Huarpea wagneriella* (du Buysson, 1904)**

(Figs 2, 3)

Sapyga wagneriella du Buysson, 1904:146, ♀, Minas Gerais, Brazil.

Huarpea wagneriella: Pate, 1947: 422.

Redescription. HW = 3.87, HL = 3.36, SL = 1.12, ML = 3.67, FWL = 10.71 mm. Black except yellow thin median band reaching median ocellus and the sides of the clypeus, band around eye except dorsal area, posterior and slender anterior dorsal pronotal bands; T3–6 and S2–6 with extensive posterior bands; T6 with two small lateral brown spots; S6 with brown apex; wings ferruginous with darker costal, stigmal, and marginal cells.

Abundant short setae on the frons, less dense at the clypeus and pronotum; mesosoma, specially mesoscutum and scutellum, covered by short decumbent setae; setae longer at the medial part of the propodeum; metasoma covered with fine pubescence. Setae of the head and pronotum ferrugineous while the rest of the body grayish.

Head and mesosoma with deep, irregular pits with almost no space between each other, less dense at the propodeum. Frontal carinae short, about 2/3 the scape length; sides of frontal sulcus forming depression which covering scape partially; clypeus with weak median longitudinal depression; occipital carina incomplete; second submarginal cell of the fore wing anteriorly almost as long as distally; S1 largely concaved with small lateral tubercle; S6 cone-like.

Material examined: 1 ♀, lectotype (here designated). BRASIL, Minas Gerais, Tronquetas, Fazenda do Sobrado [MHNP]. Paralectotype (here designated), 1 ♀, MUSEUM PARIS / MINAS GERAES (sic) / PASSA QUATRO / LAS TRANQUERAS / E.R. WAGNER, 1904 // TYPE // Selon d'un nide de / (? *Megachile*) .../ // *Sapyga wagneri* sp. nov. (handwriting) // Syntype (♀) / *Sapyga wagneriella* / du Buyss 1904 [MHNP] (Figs 2, 3).

Distribution. Brazil (Minas Gerais), Argentina (Jujuy) (Pate 1947).

The two syntypes from the MHNP here designated as lectotype and paralectotype are associated to a nest of a megachilid bee supposedly as the host species. There are not larvae of adults associated to the nest directly.

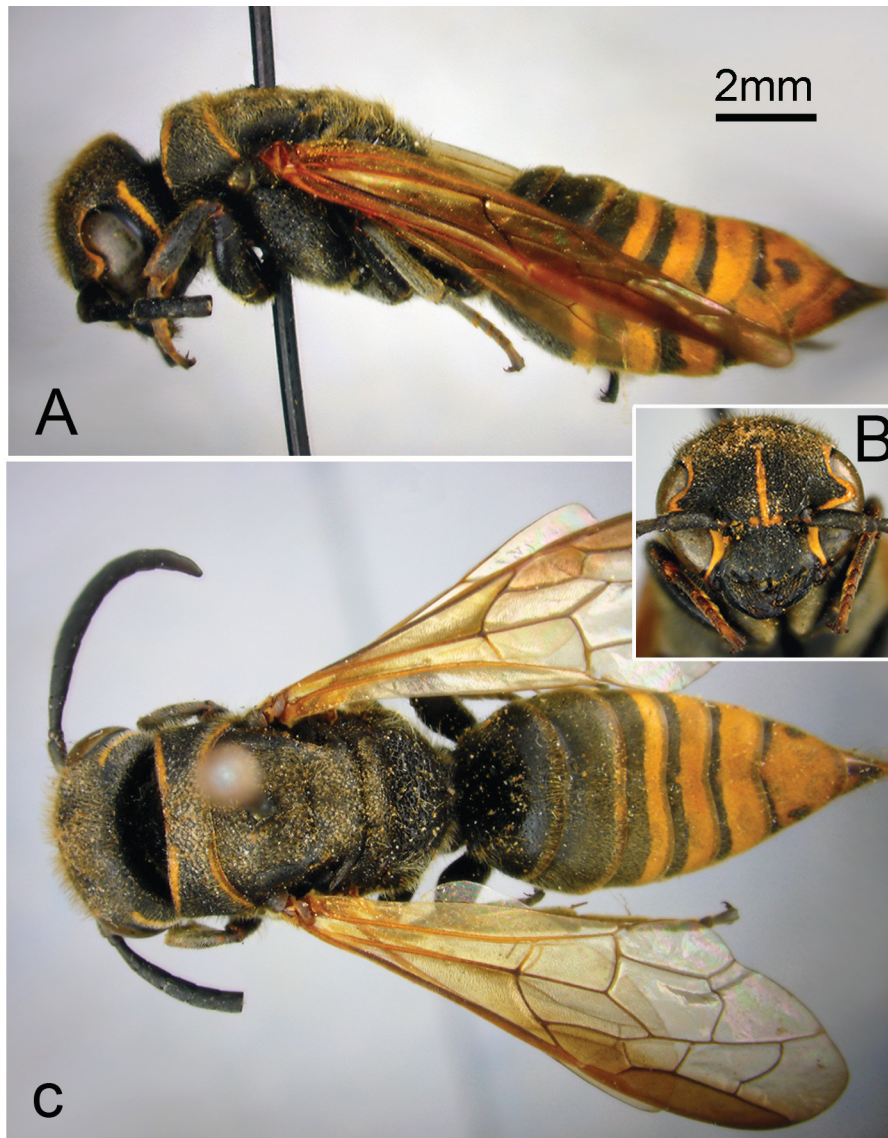


FIGURE 2. *Huarpea wagneriella*, ♀. A. lateral view, B. Head in frontal view, C. Dorsal view. Scale = 2 mm.

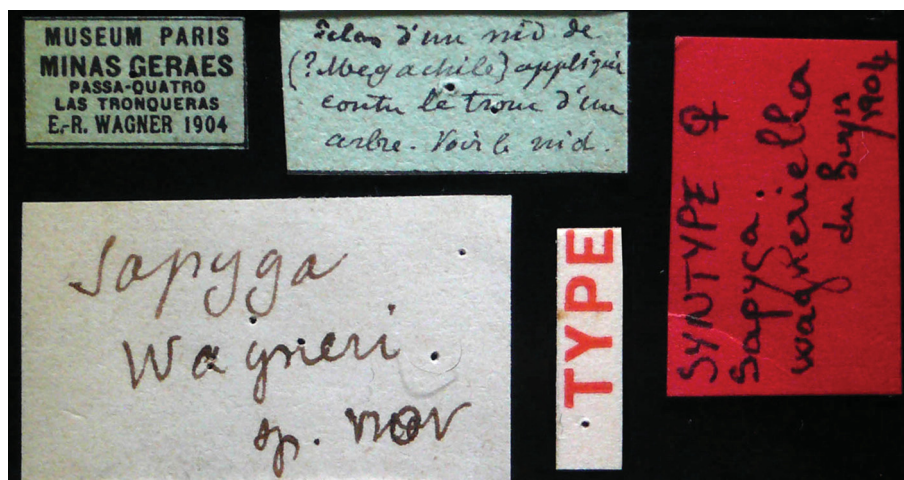


FIGURE 3. Labels of the type of *Huarpea wagneriella* (du Buysson).

Key to genera and species of Neotropical Sapygidae

(Modified and updated from Pate (1947) and Hanson (2006))

1. Head with occipital carina. (*Huarpea* Pate) 2
- Head without occipital carina 6
- 2(1). T1 without yellow markings 3
- T1 with yellow spots or stripes 4
- 3(2). Clypeus without yellow markings; S1 with yellow stripe. Brazil, Argentina.... *H. wagneriella* (du Buysson, 1904)
- Clypeus with yellow marking; S1 without yellow marking. Colombia..... *H. colombiana* **sp. nov.**
- 4(2). Head mostly red (mesoscutellum yellow). Argentina..... *H. burmeisteri* (Gerstaecker, 1861)
- Head mostly black, with or without yellow 5
- 5(4). Head with yellow spots; mesoscutellum black. Argentina *H. fallax* (Gerstaecker, 1861)
- Head black with two small spots ferruginous behind ocelli; mesoscutellum yellow. Argentina.....
..... *H. paranensis* (Gerstaecker, 1861)
- 6(1). Propodeum short, nearly vertical posterad, second submarginal cell of fore wing anteriorly longer than distally; vertex with small smooth area anterad of ocelli. (*Araucania* Pate). Chile..... *Araucania chilensis* (Reed, 1930)
- Propodeum horizontal, second submarginal cell of fore wing anteriorly as long as distally; vertex without smooth area anterad of ocelli. Costa Rica..... *Sapyga*

Acknowledgements

Authors thanks the Instituto de Investigaciones Científicas Alexander von Humboldt Colombia by allowing access to the specimen. Thanks to Agnièle Touret-Alaby, NHMP, for the loan of specimen and to Fabián Prada for additional notes. The authors also acknowledge two anonymous reviewers and the subject editor, A. Lelej, for the useful suggestions and improving manuscript.

References

- Achterberg, C. van (2014) Revision of the genus *Parasapyga* Turner (Hymenoptera, Sapygidae), with the description of two new species. *Zookeys*, 369, 61–77.
<http://dx.doi.org/10.3897/zookeys.369.6691>
- Bennett, J. & Engel, M.S. (2005) A primitive sapygid wasp in Burmese amber (Hymenoptera: Sapygidae). *Acta zoologica cracoviensia*, 48B, 1–9.
<http://dx.doi.org/10.3409/173491505783995608>
- Brothers, D. (2006) Familia Sapygidae. In: Fernández, F. & Sharkey, M.J. (Eds.), *Introducción a los Hymenoptera de La Región Neotropical*. Sociedad Colombiana de Entomología y Universidad Nacional de Colombia, Bogotá, pp. 595–596.
- Buysson, R. de (1904) Espèces nouvelles d'Hyménoptères. *Bulletin de la Société Entomologique de France*, 1904, 144–146.
- Fernández, F. & Nates, G. (1985) Hábitos de nidificación en abejas carpinteras del género *Xylocopa* (Hymenoptera: Anthophoridae). *Revista Colombiana de Entomología*, 11 (2), 36–41.
- Gerstaecker, A. (1861) Ueber die Gattung *Sapyga* Latr. *Entomologische Zeitung. Herausgegeben von dem entomologischen Vereine zu Stettin*, 22 (10–12), 309–322.
- Hanson, P. (2006). Sapygidae. In: Hanson, P. & Gauld, I.D. (Eds.), *Hymenoptera de La Región Neotropical*. The American Entomological Institute, Gainesville, pp. 583–586.
- Huber, J.T. (2009) Biodiversity of Hymenoptera. In: Foottit, R.G. & Adler, P.H. (Eds.), *Insect Biodiversity, Science and Societ*. Wiley-Blackwell, Oxford, pp. 303–323.
- Hurd, P.D. & Moure, S. (1961) Some notes on sapygid parasitism in the nests of carpenter bees belonging to the genus *Xylocopa* Latreille (Hymenoptera: Aculeata). *Journal of the Kansas Entomological Society*, 34, 19–22.
- Kurzenko, N.V. (1996) A new nearctic genus of Sapygidae with a key to the Nearctic and Palaearctic genera (Hymenoptera, Sapygidae). *Memoirs of the entomological Society of Washington*, 17, 89–94.
- Kurzenko, N.V. (2012) [Fam. Sapygidae – Sapygids]. In: Lelej, A.S. (Ed.), [Annotated Catalogue of the Insects of Russian Far East], Dalnauka, Vladivostok, pp. 403–404.
- Latreille, P.A. (1797). *Précis des caractères génériques des Insectes, disposés dans un ordre naturel*. F. Bourdeaux, Paris et Brive, xiv + 201 pp. + 7 pp. (unnumbered), 1 pl. [date of publication after Evenhuis 1997]
- Michener, C.D. (2007) *The Bees of the World*. 2nd Edition. John Hopkins University Press, Baltimore, 953 pp.

- Pate, V. (1947) Neotropical Sapygidae, with a conspectus of the family (Hymenoptera: Aculeata). *Acta Zoologica Lilloana*, 4, 393–426.
- Reed, L. (1930 ["1929"]) Nuevo género de avispa masárida chilena (Noticia preliminar). *Revista Chilena de Historia Natural Santiago*, 33, 507–510.
- Shaw, S.R. (2003) A new *Cryptalyra* species from Colombia (Hymenoptera: Megalyridae). *Zootaxa*, 248, 1–4.
- Torreta, J. (2014) Life cycle of *Huarpea fallax* (Hymenoptera: Sapygidae) in a xeric forest in Argentina. *Journal of Natural History*, 48, 1125–1134.
<http://dx.doi.org/10.1080/00222933.2013.877994>
- Turner, R. (1910) Notes on the Scoliidae. *Transactions of the Entomological Society of London*, 4, 391–406.